AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A process for dry recycling of (U,Pu)O_2 mixed-oxide nuclear fuel scrap arising from the manufacture of fuel or from the scrapping of fuel as result of shortage or discontinuation of use, comprising:

~~resulting pellets, and~~

- a ~~process~~first series of steps for pretreating ~~scraps~~said scrap, including:
  * pelletizing (20) and sintering (21) of ~~powder scraps~~the scrap, said scrap being in the form of powder, in order to form a first set of scrap pellets, and
  * micronization (23) of the first set of scrap pellets in order to form ~~scrap powder designed to be incorporated as scrap in powder form into the first (1) and/or second (4) blend.~~micronized scrap powder; and
- a ~~process~~second series of steps for manufacturing ~~(U,PU)O2~~(U,Pu)O_2 mixed oxide fuel pellets, including:
  * a dispensing and a first blending (1) of ~~waste in powder form~~at least a portion of the micronized powder scraps and, if required, of PuO_2 and/or UO_2 powders, to form a first blend;
  * micronization (2) and forced sieving (3) of ~~this~~the first blend,

* another dispensing and a second blending (4) of the first sieved blend, of UO_2 powders and, if required, of ~~scrap in powder form~~a further portion of the micronized scrap powder, to form a second blend,
* pelletizing (6) of the second blend to form pellets, and
* sintering (7) of the pellets, to form sintered pellets.

~~a process for pretreating scraps including:~~

~~* pelletizing (20) and sintering (21) of powder scraps in order to for scrap pellets, and~~

~~* micronization (23) of th scrap pellets in order to form~~

2. (currently amended): The process as claimed in Claim 1, ~~which, in addition,~~in which said first series of steps further includes crushing (22) of the first set of scrap pellets before their micronization.

3. (currently amended): The process as claimed in Claim 1, wherein scrapped unsintered powders and/or powders arising from grinding (8) of fuel pellets ~~are taken as powder scrap for the aforementioned pelletizing (20) and sintering (21) of the pretreatment~~in said second series of steps are taken as said scrap in said first series of steps.

4. (currently amended): The process as claimed in Claim 1, wherein ~~unirradiated $(U,Pu)O_2$ mixed oxide nuclear fuel pellets, possibly produced by different manufacturing processes and scrapped,~~a second set of scrap pellets, arising from sorting (9) of fuel pellets in

said second series of steps undergo the same pretreatment process as the ~~aforementioned~~first set of scrap pellets for the purpose of recycling them.

5. (currently amended): The process as claimed in Claim ~~1, wherein up to 40% of scrap, with respect to the net production, is incorporated into the aforementioned process for manufacturing fuel pellets.~~4, wherein unirradiated $(U,Pu)O_2$ mixed-oxide nuclear fuel pellets, possibly produced by different manufacturing processes and scrapped, are used as a third set of pellets, said third set of pellets undergoing the same pretreatment process as the first set of scrap pellets for the purpose of recycling them.

6. (currently amended): The process as claimed in Claim ~~1~~5, wherein up to ~~100% of scrap~~40% of scrap, with respect to the net production, is incorporated into ~~said first blend (1)~~the aforementioned process for manufacturing fuel pellets.

7. (currently amended): The process as claimed in Claim ~~1~~6, ~~wherein a proportion of 99.5%, expressed as mass of PuO_2, of the scraps from the aforementioned process for manufacturing fuel pellets is dry-recycled~~wherein up to 100% of scrap is incorporated into said first blend (1).

8. (currently amended): The process as claimed in Claim 1, wherein a ~~ball-milling process is used for the micronization (2, 23) of the first blend and/or of the scrap~~

~~pellets~~proportion of 99.5%, expressed as mass of PuO_2, of the scraps from the aforementioned process for manufacturing fuel pellets is dry-recycled.

9. (currently amended): The process as claimed in Claim 1, wherein a ~~lubricant is added before pelletizing (6 and 20), preferably zinc stearate~~ball milling process is used for the micronization (2, 23) of the first blend and/or of the scrap pellets.

10. (currently amended): The process as claimed in Claim 1, wherein ~~the fuel pellets containing scraps and/or the scrap pellets are sintered (7, 21) in an argon and hydrogen atmosphere, preferably at a temperature of between 1670 and 1760°C~~a lubricant is added before pelletizing (6 and 20).

11. (currently amended): The process as claimed in Claim ~~1, wherein, during sintering (7, 21), the partial pressure of oxygen p_{O2} is adjusted, preferably by humidification, in order to improve the interdiffusion of the PuO_2 and UO_2 oxides~~10, wherein zinc stearate is used as the lubricant.

12. (currently amended): The process as claimed in Claim 1, wherein scraps and/or UO_2 and PuO_2 oxide powders are recovered during the process or transfer operations by means of cleanable filters, so as to recycle them into scrap pellets at the pelletizing (20) and sintering (21) ~~step~~steps.

13. (new): The process as claimed claim 1, wherein the fuel pellets containing scraps and/or the scrap pellets are sintered (7, 21) in an argon and hydrogen atmosphere, at a temperature of between 1670 and 1760°C.

14. (new): The process as claimed in claim 1, wherein, during sintering (7, 21), the partial pressure of oxygen p_{O2} is adjusted, by humidification, in order to improve the interdiffusion of the PuO_2 and UO_2 oxides.